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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Herbert M. Reynolds et al  
Appl. No. : 10/035,990  
Filed : December 31, 2001  
Title : Design Template

Technology  
Center : 2800  
Grp./A.U. : 2856  
Examiner : Robert R. Raevis

Docket No. : 60,598-003

**BRIEF ON APPEAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**MAILSTOP: AF**

Applicant submits the following arguments in support of this appeal in response to the Final Rejection set forth in the Official Action dated August 3, 2004. A check in the amount of \$170 is attached to cover the required filing fee for submitting this Appeal Brief. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 08-2789.

**(I) Real Party in Interest**

This application was assigned by the inventors to the Board of Trustees Operating the Michigan State University, assignee of the patent application in issue, as evidenced by the assignment recorded at reel 012765, frame 0237.

Attorney Docket: 64,598-003

## **(II) Related Appeals and Interferences**

The present application is a continuation-in-part application of US. Application Serial No. 08/949,213. The '213 application was the subject of an Appeal to the Board of Patent Appeals and Interferences (Appeal No. 2002-0586). The '213 application and the present application have a common assignee, i.e., the Board of Trustees Operating the Michigan State University. A copy of the Appeal Decision is attached under Section X.

## **(III) Status of Claims**

Claims 1-65 are pending. Claims 1, 9, 11, 15, 40, 51, and 61-65 are independent claims.

Claims 1-3, 6-8, 11-16, 32-39, 51-60, and 62-65 stand rejected under 35 USC §102(v) as being anticipated by US Patent 3,147,617 issued September 8, 1964 to Vincent Kaptur et al (Kaptur).

Claims 9 and 61 are rejected under 35 USC §103(a) as being unpatentable over Kaptur in view of "Methodology for Posture Measurement in Automobile Seats: Experimental Methods and Computer Simulations", by T. Reid Bush, R.P. Hubbard, D.F. Ekern, pages 195 through 205 (98SAF036) ("Ekern").

Claims 4, 5, 10, and 17-31 were deemed as containing allowable subject matter, but were rejected for being dependent upon a rejected claim.

Claims 40-50 were allowed.

## **(IV) Status of Amendments**

No claim amendments have been filed after the mailing of the Final Office Action

dated August 3, 2004. All prior amendments have been entered and are reflected in the claims in the Claims Appendix (Section VIII).

**(V) Summary of Claimed Subject Matter**

Claims 1, 9, 11, 15, 40, 51, and 61-65 are independent claims. Independent claim 40 has been allowed.

Independent claim 1 sets forth a design template 10 for use with a seat 12. The design template 10 includes a torso section 22 (see Figure 1) and at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The torso section represents a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture (see page 16, lines 1-11) and at least one anatomical landmark (see page 19, line 6 to page 20, line 25). The at least one cross-sectional section of the torso 100 cooperates with the torso section 22 at the anatomical landmark (see page 48, lines 13-25). The at least one cross-sectional section 100 represents a cross-section of the torso and is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25).

Independent claim 9 sets forth an occupant restraint system for a seat which includes a lap belt and a shoulder belt (see Figures 7-11 and page 23, line 19 to page 24, line 22). The lap belt is anchored to vehicle structure to extend below an anterior superior iliac spine and above an anterior inferior iliac spine for a design template 10 with a torso

section 22 representing a torso of one of a large male, a medium male, and a small female and having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture. The shoulder belt is anchored to vehicle structure to extend between a first predetermined distance from a centerline of the seat to a shoulder joint for the design template 10. The design template 10 includes a torso section 22 (see Figure 1) and at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The torso section represents a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture (see page 16, lines 1-11) and at least one anatomical landmark (see page 19, line 6 to page 20, line 25). The at least one cross-sectional section of the torso 100 cooperates with the torso section 22 at the anatomical landmark (see page 48, lines 13-25). The at least one cross-sectional section 100 represents a cross-section of the torso and is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25).

Independent claim 11 sets forth a method of establishing occupant accommodation criteria in a vehicle package based on a predetermined class of vehicles. The method includes the step of providing a design template 10 having a torso section 22 (see Figure 1) and a leg section 44. The design template 10 also includes at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The torso section represents a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a

NEUTRAL posture and a SLUMPED posture (see page 16, lines 1-11) and at least one anatomical landmark (see page 19, line 6 to page 20, line 25). The at least one cross-sectional section of the torso 100 cooperates with the torso section 22 at the anatomical landmark (see page 48, lines 13-25). The at least one cross-sectional section 100 represents a cross-section of the torso and is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25). The method also includes the steps of defining a planar region under an accelerator to provide a heel point for the leg section (page 25, lines 19-22), defining seat stiffness of a seat whether stiffness (hard), low stiffness (soft) or some stiffness therebetween (page 25, lines 24-27), positioning the design template in the vehicle such that the eye line of sight is within vision requirements of the vehicle environment (page 25, lines 22-24), and positioning the design template in the vehicle such that the distance between the supplemental restraint system in the steering wheel to chest is as great as possible to provide a safe distance for each occupant driving the vehicle (see page 24, lines 6-22).

Independent claim 15 sets forth a method for designing a seat. The method includes the step of selecting at least one design template 10. The design template 10 includes a torso section 22 (see Figure 1), a leg section 44, and at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The torso section represents a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture (see page 16, lines 1-11) and at least one anatomical

landmark (see page 19, line 6 to page 20, line 25). The at least one cross-sectional section 100 represents a cross-section of the torso and is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25). The method also includes the steps of forming load supporting contours of the occupied seat for the at least one design template and forming unloaded patches of the unoccupied seat for the at least one design template (see page 36, line 24 to page 43, line 2).

Independent claim 51 sets forth a seat 12 comprising a seat cushion 18, a seat back 20, and at least one from a group which includes a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, and seat suspension being defined for said seat cushion and said seat back relative to a design template 10. The design template 10 includes a torso section 22 (see Figure 1) and at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The torso section represents a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture (see page 16, lines 1-11) and at least one anatomical landmark (see page 19, line 6 to page 20, line 25). The at least one cross-sectional section of the torso 100 cooperates with the torso section 22 at the anatomical landmark (see page 48, lines 13-25). The at least one cross-sectional section 100 represents a cross-section of the torso and is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the

cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25).

Independent claim 60 sets forth a design template 10 for use with a seat. The design template 10 includes a torso section 22 (see Figure 1) and at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The torso section 22 represents a torso having at least one anatomical landmark (see page 19, line 6 to page 20, line 25). The at least one cross-sectional section of the torso 100 cooperates with the torso section 22 at the anatomical landmark (see page 48, lines 13-25). The at least one cross-sectional section 100 is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25).

Independent claim 61 sets forth an occupant restraint system for a seat. The occupant restraint system includes a lap belt and a shoulder belt. The lap belt is anchored to vehicle structure to extend below an anterior superior iliac spine and above an anterior inferior iliac spine for a design template 10 with a torso section 22 representing a torso. The shoulder belt is anchored to vehicle structure to extend between a first predetermined distance from a centerline of the seat to a shoulder joint for the design template 10. The design template 10 includes the torso section 22 (see Figure 1) and at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The at least one cross-sectional section 100 is generally at a right angle to the torso section 22 (see Figures 17A-19F). The

torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25).

Independent claim 62 sets forth a method of establishing occupant accommodation criteria in a vehicle package based on a predetermined class of vehicles. The method includes the step of providing a design template 10 having a torso section 22 (see Figure 1) representing a torso, a leg section 44 and at least one cross-sectional section 100 (see Figures 17A-19F). The at least one cross-sectional section 100 is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25). The method also includes the steps of defining a planar region under an accelerator to provide a heel point for the leg section (page 25, lines 19-22), defining seat stiffness of a seat whether stiffness (hard), low stiffness (soft) or some stiffness therebetween (page 25, lines 24-27), positioning the design template in the vehicle such that the eye line of sight is within vision requirements of the vehicle environment (page 25, lines 22-24), and positioning the design template in the vehicle such that the distance between the supplemental restraint system in the steering wheel to chest is as great as possible to provide a safe distance for each occupant driving the vehicle (see page 24, lines 6-22).

Independent claim 63 sets forth a method for designing a seat. The method includes the step of providing a at least one design template 10 having a torso section 22 (see Figure



1) representing a torso, a leg section 44 and at least one cross-sectional section 100 (see Figures 17A-19F). The at least one cross-sectional section 100 is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25). The method also includes the steps of forming load supporting contours of the occupied seat for the at least one design template and forming unloaded patches of the unoccupied seat for the at least one design template (see page 36, line 24 to page 43, line 2 and page 73, line 19 to page 76, line 10).

Independent claim 64 sets forth a method of using a design template to design a vehicle seat. The method includes the step of providing a design template 10 having a torso section 22 (see Figure 1) representing a torso, a leg section 44 and at least one cross-sectional section 100 (see Figures 17A-19F). The at least one cross-sectional section 100 is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25). The method also includes the steps of establishing occupant accommodation criteria based on positioning the at least one design template in a predetermined class of vehicles to define occupied seat position to accommodate each design template on a seat having a seat cushion and a seat back in a vehicle representing the vehicle package criteria, defining at least one unloaded patch on the seat at a predetermined position, and defining at least one of a seat back height,

seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, seat cushion bolster, and seat suspension for the seat relative to the design template (see page 36, line 24 to page 43, line 2 and page 73, line 19 to page 76, line 10).

Independent claim 65 sets forth a seat comprising a seat cushion, a seat back associated with said seat cushion, and at least one from a group which includes a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, and seat suspension being defined for said seat cushion and said seat back relative to a design template 10. The design template 10 includes a torso section 22 (see Figure 1) and at least one cross-sectional section of the torso 100 (see Figures 17A-19F). The torso section 22 represents a torso having at least one anatomical landmark (see page 19, line 6 to page 20, line 25). The at least one cross-sectional section of the torso 100 cooperates with the torso section 22 at the anatomical landmark (see page 48, lines 13-25). The at least one cross-sectional section 100 is generally at a right angle to the torso section 22 (see Figures 17A-19F). The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional (see page 49, line 7 to page 50, line 25 and page 73, line 19 to page 76, line 10).

#### **(VI) Grounds of Rejection To Be Reviewed on Appeal**

As to claims 1-3, 6-8, 11-16, 32-39, 51-60, and 62-65, whether the claims are patentable under 35 USC §102(b) over Kaptur.

As to claims 9 and 61, whether the claims are patentable under 35 USC §103(a) over Kaptur in view of Ekern.

**(VII) Argument**

The law is adequately set forth in the MPEP:

**2131 Anticipation – Application of 35 U.S.C. 102(a), (b), and (e) [R-1]**

....

TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM

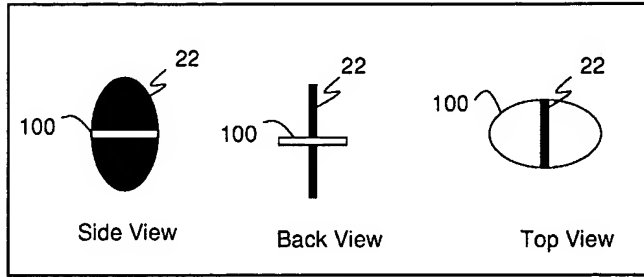
"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). >"When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) (claim to a system for setting a computer clock to an offset time to address the Year 2000 (Y2K) problem, applicable to records with year date data in "at least one of two-digit, three-digit, or four-digit" representations, was held anticipated by a system that offsets year dates in only two-digit formats). See also MPEP § 2131.02.< "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). Note that, in some circumstances, it is permissible to use multiple references in a 35 U.S.C. 102 rejection. See MPEP § 2131.01.

**The Rejection of Claims 1-3, 6-8, 11-16, 32-39, 51-60, and 62-65 Under 35 USC §102(b) as being Anticipated by Kaptur**

Kaptur discloses an accommodation checking device. The Kaptur device includes a lower leg member 38, a seat pan 66, and a back pan 108 (See Figs. 1 and 2). The lower leg member 38 includes a pair of leg members 42. A cross-sectional shape of a shoe 26 lies between the leg members 42. The seat pan 66 has a lower outer surface 68 which is “shaped to conform to the lower surface of the upper leg portions or thighs and buttocks of the predetermined human male”. The back pan 108 has a rear outer surface 110 “which is shaped to conform to the contour of the outer surface of the back”. It should be noted that neither the seat pan 66 nor the back pan 108 are cross-sectional sections of the respective portions of the “predetermined human male”, but represent the entire contour of the respective portion.

**A. Claims 1-3 and 6-8**

Claim 1 is an independent claim and claims 2-3 and 6-8 are ultimately dependent upon claim 1. As discussed above, the present invention as embodied in independent claim 1 sets forth a design template 10 with a torso section 22 and at least one cross-sectional section 100. The torso section 22 represents a torso of a large male, a medium male, or small female. The at least one cross-sectional section 100 represents a cross-section of the torso cooperates with the torso section 22 at an anatomical landmark.



A simplified illustration of the design template 10 with the torso section 22 and a single cross-sectional section 100 is shown at

left. The torso section 22 is shown in black and the cross-sectional section 100 is shown in white.

As further discussed above, the design template 10 may be constructed using any suitable media, such as electronic media, e.g., a CAD model, paper, wood, plastic, or the like (see page 19, lines 1-5 and page 48, lines 25-27).

In the embodiment disclosed in the specification, if the torso section 22 and the cross-sectional section 100 are constructed of a rigid material, then the “sections 100 and 22 would have slots or cut-outs (not shown) therein to allow them to be assembled together in a three-dimensional shape” (page 49, lines 1-6). Such cut-outs would not necessarily be required if the design template was embodied in an electronic media, such as a CAD model.

As discussed above, in contrast the accommodation checking device of Kaptur has a *single piece three-dimensional back pan 108*. Kaptur’s accommodation checking device does not include a torso section and a separate cross-sectional section as required by independent claim 1.

The advantages of the two piece, torso section and separate cross-sectional section include that the design template does not have to reproduce or model the entire surface or contour of the torso, as the Kaptur accommodation checking device

**requires.** Rather, only the torso section and the cross-sectional section at the desired anatomical landmark or landmarks, need to be embodied in the design template. If the design template is made from a rigid material, then only the two-dimensional (i.e., flat) torso section and the two-dimensional cross-sectional section or sections (i.e., flat) need to be constructed. These are then combined to make a three-dimensional model of the torso section. Likewise, if the design template is embodied in a computer model then only the torso section and the cross-sectional sections at the desired anatomical landmark or landmarks need to be modeled (and not the entire back surface of the torso section).

Again, *Kaptur does not include a torso section and a separate cross-sectional section of the torso as required by independent claim 1.*

In the rejection of independent claim 1, the Examiner simply repeats the claim language in finding that Kaptur includes a cross-section section (see page 2 of the Final Office Action, second full paragraph, lines 6-12) without identifying the portion of the Kaptur accommodation checking device which meets these claim limitations.

At the end of the final office action, the Examiner makes the following remarks which appear to be an attempt to correct this failing:

As to p. 20, third full paragraph; please look at Figure 6 and 1. Figure 6 illustrates a torso section 108 that extends from the right (where numeral 108 has lead line point to) all the way to the left (to the left of both sets of weights 142). That same torso section is 3-dimensional (as evidenced by Figure 1's side view of torso 108, and Figure 6's front view of the same torso 108), and includes a waist (landmark) and *inherently* cross-sections. One of the cross sections of the torsos passes along the vertically oriented longitudinal axis of torso 108 in Figure 6, facing in the direction to the left. Such a cross section cooperates with the torso section 108 at the waist

(landmark). That same cross section is generally at a right angle to the torso 108 as view [sic] from the front in Figure 6. Both the [sic] torso section 108 and the cross section describe a body seat interface at the waist [sic] region. The waist [sic] region is located on the body seat interface.” (Emphasis on the word “inherently” on line 8 above added).

Thus, under the Examiner’s argument, the back pan 108 of the Kaptur device constitutes both the torso section and the cross-sectional section of the subject invention, i.e., the back pan 108 includes “*inherently* cross-sections” (emphasis added). Clearly, a cross-section of a single integral back pan, as in the Kaptur device, is not a separate cross-sectional *section*, as required by independent claim 1. Thus, even the Examiner’s own explanation highlights the error in the Examiner’s rejection, i.e., although the back pan 108 of Kaptur may inherently have a cross-section, the Examiner cannot identify a torso section and a separate cross-sectional *section* (representing a cross-section of the torso) in Kaptur.

For the reasons specified above, the single piece back pan 108 of the Kaptur device has several disadvantages, towards which the two piece design template of the present invention is directed.

Since Kaptur does not include each and every limitation or element of independent claim 1, the §102(b) rejection of claim 1 and dependent claims 2-3 and 6-8 is improper and must be reversed.

#### B. Claims 11-14

As discussed above, independent claim 11 sets forth a method for establishing occupant accommodation criteria in a vehicle package. The method includes the steps of

providing a design template 10 having a torso section 22 and at least one cross-sectional section 100 representing a cross-section of the torso.

As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Further, the Examiner does not address the other steps of the claimed invention. The Examiner's rejection directly towards independent claim 11, in its entirety, is reprinted below:

As to claims 11-14, Kaptur's reference to "accommodation checking" (column 1, line 10) and "seat locations" (col. 1, line 35) are inclusive of all known seat position, including all of the way back.  
(Final Office Action, page 2, last paragraph).

However, besides the step of providing the design template 10 as discussed above, independent claim 11, includes 4 other steps, none of which are addressed by the Examiner nor taught by Kaptur. The other 4 claim steps are:

- defining a planar region under an accelerator to provide a heel point for the leg section;
- defining seat stiffness of a seat whether stiffness (hard), low stiffness (soft) or some stiffness therebetween;
- positioning the design template in the vehicle such that the eye line of sight is within vision requirements of the vehicle environment; and
- positioning the design template in the vehicle such that the distance between the supplemental restraint system in the steering wheel to chest is as great as possible to provide a safe distance for each occupant driving the vehicle.



Since Kaptur does not include each and every limitation or element of independent claim 11, the §102(b) rejection of claim 11 and dependent claims 12-14 is improper and must be reversed.

C. Claims 15-16 and 32-39

As discussed above, independent claim 15 sets forth a method for designing a seat. The method includes the step of selecting at least one design template 10. The design template 10 has a torso section 22 and at least one cross-sectional section 100 represents a cross-section of the torso. As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Further, the Examiner does not address the other steps of the claimed invention. The Examiner's rejection directly towards independent claim 15, in its entirety, is reprinted below:

As to claim [sic] 15, 32, 33, 34, 35, 36, 37, 38, 39, 62-65, determination of whether a seat is "satisfactory" (col. 1, line 14) provides for a step in designing a seat, if not the seat itself. Also, regions (patches) of the seat are for support portions [sic] of the template.

(Final Office Action, page 3, first full paragraph).

However, the method also includes the steps of forming load supporting contours of the occupied seat for the at least one design template and forming unloaded patches of the unoccupied seat for the at least one design template (see page 36, line 24 to page 43, line 2).

The Examiner does not address nor does Kaptur teach the step of “forming *load supporting* contours of the occupied seat” or the step of “forming *unloaded* patches of the unoccupied seat” (i.e., based on the design template and the seat, defining the contours of the seat which would support the person represented by the template and defining patches of the seat which would not be supporting the person represented by the template).

Since Kaptur does not include each and every limitation or element of independent claim 15, the §102(b) rejection of claim 15 and dependent claims 16 and 32-39 is improper and must be reversed.

D. Claims 51-59

As discussed above, independent claim 51 sets forth a seat 12 having a seat cushion 18, a seat back 20 and at least one of a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, and seat suspension defined for the seat cushion and the seat back relative to a design template 10.

The design template 10 has a torso section 22 and at least one cross-sectional section 100 represents a cross-section of the torso. As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Further, besides the template limitations, the Examiner does not address the other elements or limitations of the claimed invention. For example, the Examiner does not address the at least one of “a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, and

seat suspension being defined for said seat cushion and said seat back relative to a design template 10”.

Since Kaptur does not include each and every limitation or element of independent claim 51, the §102(b) rejection of claim 51 and dependent claims 52-59 is improper and must be reversed.

E. Claim 62

As discussed above, independent claim 62 sets forth a method of establishing occupant accommodation criteria in a vehicle package based on a predetermined class of vehicles. The method includes the step of providing a design template 10 having a torso section 22 representing a torso, a leg section 44 and at least one cross-sectional section 100 representing a cross-section of the torso (see above).

As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Further, the Examiner does not address the other steps of the claimed invention. The Examiner’s rejection directly towards independent claim 62, in its entirety, is reprinted below:

As to claim [sic] 15, 32, 33, 34, 35, 36, 37, 38, 39, 62-65, determination of whether a seat is “satisfactory” (col. 1, line 14) provides for a step in designing a seat, if not the seat itself. Also, regions (patches) of the seat are for support portions [sic] of the template.

(Final Office Action, page 3, first full paragraph).

However, the method also includes the steps of defining a planar region under an accelerator to provide a heel point for the leg section, defining seat stiffness of a seat

whether stiffness (hard), low stiffness (soft) or some stiffness therebetween, positioning the design template in the vehicle such that the eye line of sight is within vision requirements of the vehicle environment, and positioning the design template in the vehicle such that the distance between the supplemental restraint system in the steering wheel to chest is as great as possible to provide a safe distance for each occupant driving the vehicle.

The Examiner does not address, nor does Kaptur, teach these steps.

Since Kaptur does not include each and every limitation or element of independent claim 62, the §102(b) rejection of claim 62 is improper and must be reversed.

F. Claim 63

As discussed above, independent claim 63 sets forth a method for designing a seat. The method includes the step of selecting at least one design template 10. The design template 10 has a torso section 22 and at least one cross-sectional section 100. As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Further, the Examiner does not address the other steps of the claimed invention. The Examiner's rejection directly towards independent claim 63, in its entirety, is reprinted below:

As to claim [sic] 15, 32, 33, 34, 35, 36, 37, 38, 39, 62-65, determination of whether a seat is "satisfactory" (col. 1, line 14) provides for a step in designing a seat, if not the seat itself. Also, regions (patches) of the seat are for support portions [sic] of the template.

(Final Office Action, page 3, first full paragraph).

However, the method also includes the steps of forming load supporting contours of the occupied seat for the at least one design template and forming unloaded patches of the unoccupied seat for the at least one design template (see page 36, line 24 to page 43, line 2).

The Examiner does not address nor does Kaptur teach the step of “forming *load supporting* contours of the occupied seat” or the step of “forming *unloaded* patches of the unoccupied seat” (i.e., based on the design template and the seat, defining the contours of the seat which would support the person represented by the template and defining patches of the seat which would not be supporting the person represented by the template).

Since Kaptur does not include each and every limitation or element of independent claim 63, the §102(b) rejection of claim 63 is improper and must be reversed.

G. Claim 64

As discussed above, independent claim 64 sets forth a method of using a design template to design a vehicle seat. The method includes the step of providing a design template 10 having a torso section 22 representing a torso, a leg section 44 and at least one cross-sectional section 100 represents a cross-section of the torso. The at least one cross-sectional section 100 is generally at a right angle to the torso section 22. The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional.

As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Further, the Examiner does not address the other steps of the claimed invention. The Examiner's rejection directly towards independent claim 64, in its entirety, is reprinted below:

As to claim [sic] 15, 32, 33, 34, 35, 36, 37, 38, 39, 62-65, determination of whether a seat is "satisfactory" (col. 1, line 14) provides for a step in designing a seat, if not the seat itself. Also, regions (patches) of the seat are for support portions [sic] of the template.

(Final Office Action, page 3, first full paragraph).

However, the method also includes the steps of establishing occupant accommodation criteria based on positioning the at least one design template in a predetermined class of vehicles to define occupied seat position to accommodate each design template on a seat having a seat cushion and a seat back in a vehicle representing the vehicle package criteria, defining at least one unloaded patch on the seat at a predetermined position, and defining at least one of a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, seat cushion bolster, and seat suspension for the seat relative to the design template.

The Examiner does not address, nor does Kaptur, teach these additional steps.

Since Kaptur does not include each and every limitation or element of independent claim 64, the §102(b) rejection of claim 53 is improper and must be reversed.

H. Claim 65

As discussed above, independent claim 65 sets forth a seat comprising a seat cushion, a seat back associated with said seat cushion, and at least one from a group which includes a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, and seat suspension being defined for said seat cushion and said seat back relative to a design template 10. The design template 10 includes a torso section 22 and a cross-sectional section representing a section of the torso.

The at least one cross-sectional section 100 is generally at a right angle to the torso section 22. The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional.

As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Since Kaptur does not include each and every limitation or element of independent claim 64, the §102(b) rejection of claim 53 is improper and must be reversed.

**The Rejection of Claims 9 and 61 Under 35 USC §103(a) as being Obvious in view of Kaptur and Ekern**

A. Independent claim 9

As discussed above, independent claim 9 sets forth an occupant restraint system for a seat which includes a lap belt and a shoulder belt. The lap belt is anchored to vehicle

structure to extend below an anterior superior iliac spine and above an anterior inferior iliac spine for a design template 10 with a torso section 22 representing a torso of one of a large male, a medium male, and a small female and having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture. The shoulder belt is anchored to vehicle structure to extend between a first predetermined distance from a centerline of the seat to a shoulder joint for the design template 10. The design template 10 includes a torso section 22 and a cross-sectional section representing a section of the torso.

The at least one cross-sectional section 100 is generally at a right angle to the torso section 22. The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional.

As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Ekern discloses (1) an SAE 2-D Drafting Template (Figure 1), (2) an SAE 3-D Testing Manikin, (3) a 2-D computer model. The SAE 3-D Testing Manikin (shown in Figure 2) is substantially identical to the Kaptur device, and thus, includes a one piece back pan. Ekern does not teach a two-piece design template as required by independent claim 9.

Since neither Kaptur nor Ekern, singularly or in combination, include each and every limitation or element of independent claim 9, the §103(a) rejection of claim 9 is improper and must be reversed.



B. Claim 61

As discussed above, independent claim 61 sets forth an occupant restraint system for a seat. The occupant restraint system includes a lap belt and a shoulder belt. The lap belt is anchored to vehicle structure to extend below an anterior superior iliac spine and above an anterior inferior iliac spine for a design template with a torso section representing a torso. The shoulder belt is anchored to vehicle structure to extend between a first predetermined distance from a centerline of the seat to a shoulder joint for the design template.

An at least one cross-sectional section 100 is generally at a right angle to the torso section 22. The torso section 22 and the cross-sectional section 100 describe a body seat interface at the at least one anatomical landmark. The anatomical landmark is located on the body seat interface, which is three dimensional.

As discussed above, the Kaptur device does not include these two elements. Rather, Kaptur includes a one piece back pan 108 (see above).

Ekern discloses (1) an SAE 2-D Drafting Template (Figure 1), (2) an SAE 3-D Testing Manikin, (3) a 2-D computer model. The SAE 3-D Testing Manikin (shown in Figure 2) is substantially identical to the Kaptur device, and thus, includes a one piece back pan. Ekern does not teach a two-piece design template as required by independent claim 9.

Since neither Kaptur nor Ekern, singularly or in combination, include each and every limitation or element of independent claim 61, the §103(a) rejection of claim 61 is improper and must be reversed.

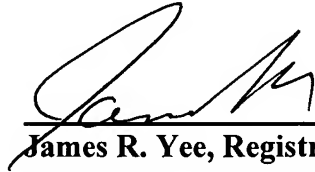
It is respectfully submitted that the rejections do not conform to the mandates of 35 U.S.C. § 102 § 103 or the MPEP (as set forth above) and that the rejections of the examiner should be reversed.

Respectfully submitted,

**HOWARD & HOWARD ATTORNEYS, P.C.**

**October 29, 2004**

Date



**James R. Yee, Registration, No. 34,460**

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**CERTIFICATE OF MAILING**

I hereby certify that the attached **Appeal Brief** for application serial number **10/404,771** filed **April 1, 2003** is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on this **October 29, 2004**.

  
Melissa S. Dadisman

## **(VIII) Claims Appendix**

1. A design template for use with a seat, comprising:

a torso section representing a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture and at least one anatomical landmark; and

at least one cross-sectional section of the torso cooperating with said torso section at the anatomical landmark, the at least one cross-sectional section representing a cross-section of the torso and being generally at a right angle to the torso section and describing a body seat interface at the at least one anatomical landmark, the anatomical landmark being located on the body seat interface, the body seat interface described by the torso section and the at least one cross-sectional section being three dimensional.

2. A design template as set forth in claim 1 wherein said torso section has a portion of an outer contour conforming to a deformed shape of an interface contour between a seat and a seated occupant.

3. A design template as set forth in claim 2 wherein said torso section includes anatomical details located relative to each other and the interface contour is relative to said anatomical details.

4. A design template as set forth in claim 1 wherein said torso section includes indicia of skeletal landmarks for a shoulder joint and a hip joint and an axis connected therebetween.

5. A design template as set forth in claim 1 wherein said torso section includes a centerline projection of a pelvis with indicia representing an ischial tuberosity, anterior superior iliac spine, pubic symphysis and sacrum.

6. A design template as set forth in claim 1 wherein said torso section includes an angular scale for torso angle.

7. A design template as set forth in claim 1 wherein said torso section includes an angular scale for hip angle.

8. A design template as set forth in claim 1 wherein said torso section has an anterior shape that is anthropometrically and anatomically correct.

9. An occupant restraint system for a seat comprising:  
a lap belt being anchored to vehicle structure to extend below an anterior superior iliac spin and above an anterior inferior iliac spine for a design template with a torso section representing a torso of one of a large male, a medium male, and a small female and having one of an ERECT posture, a NEUTRAL posture and a

SLUMPED posture; and

a shoulder belt being anchored to vehicle structure to extend between a first predetermined distance from a centerline of the seat to a shoulder joint for the design template, said design template including at least one cross-sectional section representing a cross-section of the torso and cooperating with said torso section at an anatomical landmark, the at least one cross-sectional section being generally at a right angle to the torso section and describing a body seat interface at the at least one anatomical landmark, the anatomical landmark being located on the body seat interface, the body seat interface described by the torso section and the at least one cross-sectional section being three dimensional.

10. An occupant restraint system as set forth in claim 9 wherein said first predetermined distance is 190 mm for the small female, 246 mm for the medium male and 267 mm for the large male, and said second predetermined distance is 51 mm for the small female, 65 mm for the medium male and 71 mm for the large male.

11. A method of establishing occupant accommodation criteria in a vehicle package based on a predetermined class of vehicles comprising:

providing a design template having a torso section representing a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture and having a leg section and at least one cross-sectional section cooperating with said torso section at an anatomical

landmark and describing a shape of a body seat interface, the at least one cross-sectional section representing a cross-section of the torso and being generally at a right angle to the torso section, the anatomical landmark being located on the body seat interface, the body seat interface described by the torso section and the at least one cross-sectional section being three-dimensional;

defining a planar region under an accelerator to provide a heel point for the leg section;

defining seat stiffness of a seat whether stiffness (hard) , low stiffness (soft) or some stiffness therebetween;

positioning the design template in the vehicle such that the eye line of sight is within vision requirements of the vehicle environment; and

positioning the design template in the vehicle such that the distance between the supplemental restraint system in the steering wheel to chest is as great as possible to provide a safe distance for each occupant driving the vehicle.

12. A method as set forth in claim 11 including the step of adjusting joint angles at an ankle, knee, and hip of the design template to lie within a predetermined range.

13. A method as set forth in claim 11 including the step of reclining the torso section a predetermined angle from vertical.

14. A method as set forth in claim 11 including the 25 step of defining the seat design position at the rearmost and downmost position of the seat in the vehicle package.

15. A method for designing a seat comprising:

selecting at least one design template having a torso section representing a torso of one a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture and having a leg section and at least one cross-sectional section cooperating with said torso section at an anatomical landmark, the at least one cross-sectional section representing a cross-section of the torso and being generally at a right angle to the torso section and describing a body seat interface at the anatomical landmark, the anatomical landmark being located on the body seat interface, the body seat interface described by the torso section and the at least one cross-sectional section being three dimensional;

forming load supporting contours of the occupied seat for the at least one design template; and

forming unloaded patches of the unoccupied seat for the at least one design template.

16. A method as set forth in claim 15 including the step of defining an offset surface contour of the design template in the occupied seat and seat structure.



17. A method as set forth in claim 15 including the step of estimating a first point of a shoulder patch on a seat back at a T4 spinal landmark.

18. A method as set forth in claim 15 including the step of estimating a first point of the load supporting patch of a seat back at S° under occupant load.

19. A method as set forth in claim 18 including the step of estimating a second point at S° on the unloaded patch of the seat back.

20. A method as set forth in claim 15 including the step of estimating a first point of a load supporting patch of a seat back at L° under occupant load.

21. A method as set forth in claim 20 including the step of estimating a second point at LU on an unloaded patch of the seat back.

22. A method as set forth in claim 15 including the step of estimating a point on a bite line patch of a seat back at "B" .

23. A method for as set forth in claim 15 including the step of estimating a first point of a load supporting patch of a seat cushion at I<sub>D</sub>° under occupant load.

24. A method as set forth in claim 23 including the step of estimating a second point at  $I_D^\circ$  on an unloaded patch of the seat cushion.

25. A method a set forth in claim 15 including the step of estimating a first point of a load supporting patch of a seat cushion at  $T^\circ$  under occupant load.

26. A method as set forth in claim 25 including the step of estimating a second point at  $T^U$  on an unloaded patch of the seat cushion.

27. A method as set forth in claim 26 including the step of optimally matching the unoccupied load support points for the other torso sections and postures of the design template to define the unoccupied seat patch.

28. A method as set forth in claim 27 including the step of constructing an unloaded point  $S^U$  for each of the design templates.

29. A method as set forth in claim 27 including the step of constructing an unloaded point  $L^U$  for each of the design templates.

30. A method as set forth in claim 27 including the step of constructing an unloaded point  $I_D^U$  for each of the design templates.

31. A method as set forth in claim 27 including the step of constructing an unloaded point  $T^U$  for each of the design templates.

32. A method as set forth in claim 15 including the step of defining an unoccupied seat region patch for a shoulder.

33. A method as set forth in claim 15 including the step of defining an unoccupied seat patch for a thorax region.

34. A method as set forth in claim 15 including the step of defining an unoccupied seat patch for a lumbar.

35. A method as set forth in claim 15 including the step of defining an unoccupied seat patch for a bite line.

36. A method as set forth in claim 15 including the step of defining an unoccupied seat patch for an ischium.

37. A method as set forth in claim 15 including the step of defining an area for a seat suspension in the seat.

38. A method as set forth in claim 15 including the step of defining an unoccupied seat patch for a thigh.

39. A method as set forth in claim 15 including the step of defining a waterfall region of an unoccupied seat.

40. A method of using a design template to design a vehicle seat comprising:

providing at least one design template having a torso section representing a torso of one of a large male, a medium male and a small female having one an ERECT posture, a NEUTRAL posture and a SLUMPED posture and at least one cross-sectional section cooperating with said torso section at an anatomical landmark, the anatomical landmark being located on the body seat interface, the at least one cross-sectional section representing a cross-section of the torso being generally at a right angle to the torso section to provide a three-dimensional design template,;

establishing occupant accommodation criteria based on positioning the at least one design template in a predetermined class of vehicles to define occupied seat position to accommodate the at least one design template on a seat having a seat cushion and a seat back in a vehicle representing the vehicle package criteria; and

defining at least one from a group comprising unloaded patches on the seat at A, SU, LU, B, IDU and TU;

defining at least one from a group comprising a seat back height, seat cushion

length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, seat cushion bolster, and seat suspension for the seat relative to the design template.

41. A method as set forth in claim 40 wherein said step of defining a seat back height for the seat relative to the design template comprises terminating a seat back height relative to the design template at or above a top of the shoulder patch.

42. A method as set forth in claim 40 wherein said step of defining a seat back height for the seat relative to the design template comprises locating a top cross member of the seat back frame relative to the design template at a position equal to or higher than the thorax patch in the unoccupied seat.

43. A method as set forth in claim 40 wherein said step of defining a head restraint position for the seat relative to the design template comprises determining a position of a center of mass of a head for the torso section relative to the design template, locating a back of a head for the torso section of the large male relative to the determined position of the center of mass of the head, and defining a lowest maximum height of the head restraint relative to the design template at the back of the head for the torso section of the large percentile male having the ERECT posture.

44. A method as set forth in claim 40 wherein said step of defining a shoulder patch for the seat relative to the design template comprises defining an area for the shoulder patch relative to the design template between a T4 contact zone for the torso section of the large male having the ERECT posture and the T4 contact zone for the torso section of the medium male having the SLUMPED posture.

45. A method as set forth in claim 40 wherein said step of defining a thorax patch for the seat relative to the design template comprises defining an area for the thorax patch relative to the design template between a thorax seat patch for the torso section of the large male having the ERECT posture and the thorax seat patch for the torso section of the small female having the SLUMPED posture.

46. A method as set forth in claim 40 wherein said step of defining a lumbar patch for the seat relative to the design template comprises defining an area for the lumbar patch relative to the design template between a lumbar seat patch for the torso section of the large male having the ERECT posture and the lumbar seat patch for the torso section of the small female having the SLUMPED posture.

47. A method as set forth in claim 40 wherein said step of defining a lumbar patch for the seat relative to the design template comprises locating a two-way, horizontal displacement, adjustable lumbar support for the seat relative to the

design template midway between and the highest and lowest locations of L4 for the torso sections of the design template.

48. A method as set forth in claim 40 wherein said step of defining a lumbar patch for the seat relative to the design template comprising locating a minimal vertical displacement of an adjustable lumbar support for the seat relative to the design template representing the highest and lowest locations of L4 for the torso sections of the design template.

49. A method as set forth in claim 40 wherein said step of defining a seat suspension for the seat relative to the design template comprises defining an area for the seat suspension relative to the design template between a furthest forward and rearward ischial load points for the torso section of the large male having the SLUMPED posture and for the torso section of the small female having the ERECT posture.

50. A method as set forth in claim 40 wherein said step of defining a seat cushion length for the seat relative to the design template comprises terminating a length of the seat cushion relative to the design template from ID on the torso section of the small female.

51. A seat comprising:

a seat cushion;

a seat back associated with said seat cushion; and

at least one from a group comprising a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, and seat suspension being defined for said seat cushion and said seat back relative to a design template having a torso section representing a torso of one of a large male, a medium male and a small female having one of an ERECT posture, a NEUTRAL posture and a SLUMPED posture and at least one cross-sectional section cooperating with said torso section at an anatomical landmark, the at least one cross-sectional section representing a cross-section of the torso and being generally at a right angle to the torso section and describing a body seat interface at the anatomical landmark, the anatomical landmark being located on the body seat interface, the body seat interface described by the torso section and the at least one cross-sectional section being three-dimensional.

52. A seat as set forth in claim 51 wherein said seat back height of said seat back terminates at or above a top of the shoulder patch on the unloaded seat surface of the seat.



53. A seat as set forth in claim 51 wherein said seat back includes a top cross member at a position equal to or higher than the thorax patch in the unoccupied seat.

54. A seat as set forth in claim 51 wherein said head restraint position is located relative to a position of a back of a head for the torso section.

55. A seat as set forth in claim 51 wherein said lumbar patch is located between the highest and lowest locations of L4 for the torso sections of the design template.

56. A seat as set forth in claim 55 wherein said lumbar patch is located for minimal vertical displacement to be between on the highest and lowest locations of L4 on the lumbar patch of torso sections of the design template.

57. A seat as set forth in claim 51 wherein said seat cushion length terminates at a back of a calf of the torso section for the small female sitting in a position on the seat that accommodates her driving position.

58. A seat as set forth in claim 51 wherein said seat suspension is defined in an area under the ischial patch for the torso section of the large male having the SLUMPED posture and for the torso section of the small female having the ERECT posture.

59. A seat as set forth in claim 51 including a seat anti-submarining restraint system defined in an area between a furthest forward ischial load zone for the torso section of the high clearance offset for the design template and the vertical barrier at the nose of the seat cushion to horizontal motion of the ischium for the design template.

60. (Previously Amended). A design template for use with a seat, comprising:

a torso section representing a torso and having at least one anatomical landmark;  
and

at least one cross-sectional section cooperating with said torso section at the anatomical landmark, the at least one cross-sectional section being generally at a right angle to the torso section and describing a body seat interface at the at least one skeletal landmark, the anatomical landmark being located on the body seat interface, the body seat interface described by the torso section and the at least one cross-sectional section being three dimensional.

61. An occupant restraint system for a seat, comprising:

a lap belt being anchored to vehicle structure to extend below an anterior superior iliac spin and above an anterior inferior iliac spine for a design template with a torso section representing a torso and having at least one anatomical landmark; and

a shoulder belt being anchored to vehicle structure to extend between a first predetermined distance from a centerline of the seat to a shoulder joint for the design template, said design template including at least one cross-sectional section cooperating with said torso section at an anatomical landmark and describing a body seat interface at the at least one anatomical landmark, the at least one cross-sectional section being generally at a right angle to the torso section, the anatomical landmark being located on the body seat interface, the body seat interface described by the torso section and the at least one cross-sectional section being three dimensional.

62. A method of establishing occupant accommodation criteria in a vehicle package based on a predetermined class of vehicles comprising:

providing a design template having a torso section representing a torso, a leg section and at least one cross-sectional section of the torso, the torso section having at least one anatomical landmark, the at least one cross-sectional section generally being at a right angle to the torso section and cooperating with said torso section at the anatomical landmark to provide a three-dimensional body seat interface, the anatomical landmark being located on the body seat interface;

defining a planar region under an accelerator to provide a heel point for the leg section;

defining seat stiffness of a seat;

positioning the design template in the vehicle such that the eye line of sight is within vision requirements of the vehicle environment; and

positioning the design template in the vehicle such that the distance between the supplemental restraint system in the steering wheel to chest is as great as possible to provide a safe distance for each occupant driving the vehicle.

63. A method for designing a seat comprising:

providing at least one design template having a torso section representing a torso, a leg section, at least one cross-sectional section of the torso, the torso section having at least one anatomical landmark, the at least one cross-sectional section generally being at a right angle to the torso section and cooperating with said torso section at the anatomical landmark to provide a three-dimensional body seat interface, the anatomical landmark being located on the body seat interface;

forming load supporting contours of the occupied seat for the at least one design template; and

forming unloaded patches of the unoccupied seat for the at least one design template.

64. A method of using a design template to design a vehicle seat comprising:

providing at least one design template having a torso section representing a torso and at least one cross-sectional section of the torso, the torso section having at least one anatomical landmark, the at least one cross-sectional section generally being at a right angle to the torso section and cooperating with said torso section at the anatomical landmark to provide a three-dimensional body seat interface, the anatomical landmark being located on the body seat interface;

establishing occupant accommodation criteria based on positioning the at least one design template in a predetermined class of vehicles to define occupied seat position to accommodate each design template on a seat having a seat cushion and a seat back in a vehicle representing the vehicle package criteria; and

defining at least one unloaded patch on the seat at a predetermined position;

defining at least one of a seat back height, seat cushion length, head restraint position, shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, seat cushion bolster, and seat suspension for the seat relative to the design template.

65. A seat comprising:

a seat cushion;

a seat back associated with said seat cushion; and

at least one of a seat back height, seat cushion length, head restraint position,

shoulder patch, thorax patch, lumbar patch, bite line patch, ischial patch, thigh patch, and seat suspension being defined for said seat cushion and said seat back relative to a design template having a torso section representing a torso and at least one cross-sectional section of the torso, the torso section having at least one anatomical landmark, the at least one cross-sectional section generally being at a right angle to the torso section and cooperating with said torso section at the anatomical landmark to provide a three-dimensional body seat interface, the anatomical landmark being located on the body seat interface.

**(IX) Evidence Appendix**

None.

**(X) Related Proceedings Index**

Attached



## Appendix (X) Related Proceedings Index

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.



Paper No. 36

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex Parte* HERBERT M. REYNOLDS, ROBERT KERR,  
RAYMOND BRODEUR, KHALDOUN RAYES,  
DOUGLAS NEAL and YUNTAO CUI

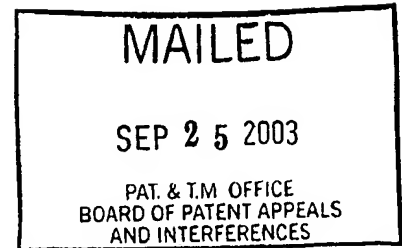
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Appeal No. 2002-0586  
Application 08/949,213

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ON BRIEF

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Before WALTZ, DELMENDO and JEFFREY T. SMITH, *Administrative Patent Judges*.  
JEFFREY T. SMITH, *Administrative Patent Judge*.

*Decision on appeal under 35 U.S.C. § 134*

Applicants appeal the decision of the Primary Examiner finally rejecting claims 1 to 6, 8 to 10 and 12 to 32.<sup>1,2</sup> We have jurisdiction under 35 U.S.C. § 134.

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<sup>1</sup> According to Appellants, claims 7 and 11 contain allowable subject matter. (Brief, p. 2).

<sup>2</sup> In rendering our decision we have considered Appellants' position present in the Brief, filed July 23, 2001 and the Reply Brief, filed October 01, 2001.

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As evidence of unpatentability, the Examiner relies on the following reference:

Kaptur et al. (Kaptur)	3,147,617	Sep. 08, 1964
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***THE REJECTIONS***

The Examiner rejected claims 1 to 6, 8 to 10, 12 to 17, and 19 to 32 as unpatentable under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Kaptur; and claim 18 as unpatentable under 35 U.S.C. § 103(a) as obvious over Kaptur. (Answer, p. 3).

***DISCUSSION***

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the Examiner and Appellants in support of their respective positions. This review leads us to conclude that the Examiner's rejections are not well founded. Our reasons for this determination follow. We will limit our discussion to claim 1, the sole independent claim.

Rather than reiterate the conflicting viewpoints advanced by the Examiner and Appellants concerning the above-noted rejections, we refer to the Answer and the Briefs.

The invention is directed to a design template that incorporates posture as part of the geometric representation of a seat occupant. The design template comprises a torso

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containing indicia of skeletal landmarks. According to the specification, page 4, the design template allows seat designers to accurately represent the centerline position and posture of the occupant. Claim 1 which is representative of the invention is reproduced below:

1. A design template comprising:  
a torso for at least one of designing, evaluating and measuring human occupant accommodation being one of a group comprising a 95<sup>th</sup> percentile male, 50<sup>th</sup> percentile male and 5<sup>th</sup> percentile female having each being one of a group comprising an ERECT posture, a NEUTRAL posture and a SLUMPED posture, said torso containing indicia of skeletal landmarks relative to a seated human body occupant.

Our initial inquiry is directed to the scope of the claimed subject matter. During patent prosecution, claims are to be given their broadest reasonable interpretation consistent with the specification, and the claim language is to be read in view of the specification as it would be interpreted by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1053-54, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *In re Sneed*, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983); *In re Okuzawa*, 537 F.2d 545, 548, 190 USPQ 464, 466 (CCPA 1976).

Claim construction is a legal issue which is reviewed *de novo*. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998) (en

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banc); *In re Freeman*, 30 F.3d, 1459, 1464, 31 USPQ2d 1444, 1447 (Fed. Cir. 1994). Here claim 1 recites the term “percentile.” The only description that sheds light to this term in the specification is at page 15, which enlightens one skilled in the art that the torso section is “dimensionally accurate to simulate or represent [the] body size of a human male who is 95<sup>th</sup> percentile in weight and stature, a human male who is 50<sup>th</sup> percentile in weight and stature or a human female who is 5<sup>th</sup> percentile in weight and stature.” (emphasis added). Further, we find from the description that the term “torso” is limited to those which are manufactured.

The subject matter of claim 1 is directed to a design template comprising a torso. The torso contains indicia of skeletal landmarks relative to a seated human body. The design template is used for designing, evaluating and measuring human occupant accommodation. The design template is designed to evaluate human occupant accommodation selected from the group consisting of a 95<sup>th</sup> percentile male, 50<sup>th</sup> percentile male and 5<sup>th</sup> percentile female. The selected design template has a posture selected from the group consisting of an ERECT posture, a NEUTRAL posture and a SLUMPED posture.

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The Examiner rejected claims 1 to 6, 8 to 10, 12 to 17, and 19 to 32 as unpatentable under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Kaptur.

Anticipation under § 102 requires that the identical invention that is claimed was previously known to others and thus is not new. *See Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991). A principal question in the § 102 rejection is whether the Examiner has established that the accommodation checking device described in Kaptur is identical to the claimed design template. We answer this question in the negative.

In comparing the subject matter of appealed claim 1 against the accommodation checking device disclosed in Kaptur, we find that the Appellants' claimed design template represents or simulates the human male in the 95<sup>th</sup> percentile in weight and stature, a human male who is 50<sup>th</sup> percentile in weight and stature or a human female who is 5<sup>th</sup> percentile in weight and stature. Also, we find that Kaptur discloses "the specific device shown represents or simulates the human male in the 50th percentile in weight and the 90th percentile in stature". (Col. 5, ll. 40-43). Further, we find the Examiner has not addressed the percentile in stature of Kaptur's accommodation device in the Answer.

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Thus, we determine that Kaptur's accommodation device is not the same as the claimed design template. The 35 U.S.C. § 102(b) rejection is therefore reversed.

The Examiner rejected the claims under 35 U.S.C. § 103(a) as obvious over Kaptur. However, the Examiner has not provided the proper factual basis to support a legal conclusion of obviousness as set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). Consequently, the Examiner has not met the initial burden of establishing a *prima facie* case of unpatentability under section 103. The 35 U.S.C. § 103(a) rejections of the claims are therefore reversed.

### ***OTHER ISSUES***

Prior to disposition of this application the Examiner should re-evaluate the patentability of the claimed subject matter over the Kaptur reference under 35 U.S.C. § 103. Specifically, the Examiner should address whether it would have been obvious to a person of ordinary skill in the art to modify Kaptur's accommodation device to simulate a human male in the 50<sup>th</sup> percentile in weight and stature.

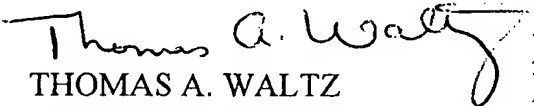
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***CONCLUSION***

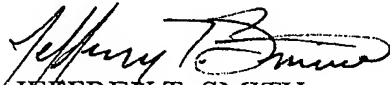
The rejection of claims 1 to 6, 8 to 10, 12 to 17, and 19 to 32 as unpatentable under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Kaptur; and claim 18 as unpatentable under 35 U.S.C. § 103(a) as obvious over Kaptur are reversed.

***REVERSED***

  
THOMAS A. WALTZ  
*Administrative Patent Judge*

  
ROMULO H. DELMENDO  
*Administrative Patent Judge*

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*Administrative Patent Judge*

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### tor·so

**tor·so** (tôr'sō) *noun*

*plural tor·sos or tor·si* (-sē)

1. The human body excluding the head and limbs; trunk.
2. A statue of the human body with the head and limbs omitted or removed.
3. A truncated or unfinished thing.

[Italian, trunk of a statue, from Old Italian, stalk, stem, from Vulgar Latin \**tursus*, from Latin *thyrsus*, stalk. See *thyrsus*.]

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